SEVENTH APPROXIMATION
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS (Version 6, 9 April 2003)

IDENTIFICATION INFORMATION

Assessment Geologist:	D.K. Higley-Feldman	Date:	31-Aug-10
Region:	North America	Number:	5
Province:	Anadarko Basin	Number:	5058
Total Petroleum System:	Pennsylvanian Composite	Number:	505802
Assessment Unit:	Desmoinesian	Number:	50580202
Based on Data as of:			
Notes from Assessor:			

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) **or** Gas (≥20,000 cfg/bo overall): Gas

What is the minimum accumulation size? 0.5 mmboe grown
(the smallest accumulation that has potential to be added to reserves)

No. of discovered accumulations exceeding minimum size: Oil: 45 Gas: 42
Established (>13 accums.) X Frontier (1-13 accums.) Hypothetical (no accums.)

Median size (grown) of discovered oil accumulations (mmbo):
1st 3rd 2 2nd 3rd 1.6 3rd 3rd 1.7
Median size (grown) of discovered gas accumulations (bcfg):
1st 3rd 7.4 2nd 3rd 11 3rd 3rd 7.3

Assessment-Unit Probabilities:

Attribute	Probability of occurrence (0-1.0)
1. **CHARGE:** Adequate petroleum charge for an undiscovered accum. ≥ minimum size:	1.0
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered accum. ≥ minimum size:	1.0
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered accum. ≥ minimum siz	1.0

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3): 1.0

UNDISCOVERED ACCUMULATIONS

No. of Undiscovered Accumulations: How many undiscovered accums. exist that are ≥ min. size?:
(uncertainty of fixed but unknown values)

Oil Accumulations:	minimum (>0)	1	mode	4	maximum	10
Gas Accumulations:	minimum (>0)	1	mode	10	maximum	25

Sizes of Undiscovered Accumulations: What are the sizes (**grown**) of the above accums?:
(variations in the sizes of undiscovered accumulations)

Oil in Oil Accumulations (mmbo):	minimum	0.5	median	1	maximum	10
Gas in Gas Accumulations (bcfg):	minimum	3	median	6	maximum	60

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AVERAGE RATIOS FOR UNDISCOVERED ACCUMS., TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Accumulations:	minimum	mode	maximum
Gas/oil ratio (cfg/bo)	2000	4000	6000
NGL/gas ratio (bngl/mmcfg)	20	40	60

Gas Accumulations:	minimum	mode	maximum
Liquids/gas ratio (bliq/mmcfg)	15	30	45
Oil/gas ratio (bo/mmcfg)			

SELECTED ANCILLARY DATA FOR UNDISCOVERED ACCUMULATIONS

(variations in the properties of undiscovered accumulations)

Oil Accumulations:	minimum	mode	maximum
API gravity (degrees)	23	40	55
Sulfur content of oil (%)	0	0.1	0.2
Depth (m) of water (if applicable)			

	minimum	F75	mode	F25	maximum
Drilling Depth (m)	400		1500		3000

Gas Accumulations:	minimum	mode	maximum
Inert gas content (%)	0.6	2	22
CO_2 content (%)	0.1	0.4	1
Hydrogen-sulfide content (%)	0	0.1	0.3
Depth (m) of water (if applicable)			

	minimum	F75	mode	F25	maximum
Drilling Depth (m)	1300		2000		4000

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO STATES
Surface Allocations (uncertainty of a fixed value)

1. Colorado		represents 15.67 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		35.00	
Gas in Gas Accumulations:			
Volume % in entity		7.00	
2. Kansas		represents 36.63 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		35.00	
Gas in Gas Accumulations:			
Volume % in entity		13.00	
3. Oklahoma		represents 36.66 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		20.00	
Gas in Gas Accumulations:			
Volume % in entity		65.00	
4. Texas		represents 11.03 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		10.00	
Gas in Gas Accumulations:			
Volume % in entity		15.00	
5.		represents	area % of the AU	
Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			
6.		represents	area % of the AU	
Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

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7. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

8. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO LAND ENTITIES
Surface Allocations (uncertainty of a fixed value)

1. Federal Lands		represents 2.51 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum	
Volume % in entity		2.50		
Gas in Gas Accumulations:				
Volume % in entity		2.50		
2. Private Lands		represents 95.13 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum	
Volume % in entity		95.50		
Gas in Gas Accumulations:				
Volume % in entity		95.50		
3. Tribal Lands		represents 0.01 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum	
Volume % in entity		0.00		
Gas in Gas Accumulations:				
Volume % in entity		0.00		
4. Other Lands		represents _____ area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum	
Volume % in entity				
Gas in Gas Accumulations:				
Volume % in entity				
5. CO State Lands		represents 1.11 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum	
Volume % in entity		1.00		
Gas in Gas Accumulations:				
Volume % in entity		1.00		
6. KS State Lands		represents 0.07 area % of the AU		
Oil in Oil Accumulations:	minimum	mode	maximum	
Volume % in entity		0.00		
Gas in Gas Accumulations:				
Volume % in entity		0.00		

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7. OK State Lands represents 1.18 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity		1.00	
Gas in Gas Accumulations:			
Volume % in entity		1.00	

8. TX State Lands represents 0.00 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity		0.00	
Gas in Gas Accumulations:			
Volume % in entity		0.00	

9. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

10. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

11. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

12. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO FEDERAL LAND SUBDIVISIONS
Surface Allocations (uncertainty of a fixed value)

1. Bureau of Land Management (BLM) represents 0.03 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity		0.03	
Gas in Gas Accumulations: Volume % in entity		0.03	

2. BLM Wilderness Areas (BLMW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

3. BLM Roadless Areas (BLMR) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

4. National Park Service (NPS) represents 0.00 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity		0.00	
Gas in Gas Accumulations: Volume % in entity		0.00	

5. NPS Wilderness Areas (NPSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

6. NPS Protected Withdrawals (NPSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

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7. US Forest Service (FS) represents 1.82 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity		1.82	
Gas in Gas Accumulations:			
Volume % in entity		1.82	

8. USFS Wilderness Areas (FSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

9. USFS Roadless Areas (FSR) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

10. USFS Protected Withdrawals (FSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

11. US Fish and Wildlife Service (FWS) represents 0.19 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity		0.19	
Gas in Gas Accumulations:			
Volume % in entity		0.19	

12. USFWS Wilderness Areas (FWSW) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

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13. USFWS Protected Withdrawals (FWSP) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

14. Wilderness Study Areas (WS) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

15. Department of Energy (DOE) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

16. Department of Defense (DOD) represents 0.40 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity		0.40	
Gas in Gas Accumulations: Volume % in entity		0.40	

17. Bureau of Reclamation (BOR) represents 0.04 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity		0.04	
Gas in Gas Accumulations: Volume % in entity		0.04	

18. Tennessee Valley Authority (TVA) represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations: Volume % in entity			
Gas in Gas Accumulations: Volume % in entity			

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19. Other Federal represents 0.03 area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity		0.02	
Gas in Gas Accumulations:			
Volume % in entity		0.02	

20. _____ represents _____ area % of the AU

	minimum	mode	maximum
Oil in Oil Accumulations:			
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

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ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO ECOSYSTEMS
Surface Allocations (uncertainty of a fixed value)

1.	Arkansas Tablelands (ARTL)	represents	10.90	area % of the AU	
Oil in Oil Accumulations:	minimum		mode		maximum
Volume % in entity			25.00		
Gas in Gas Accumulations:					
Volume % in entity			5.00		
2.	Central High Plains (CNHP)	represents	3.87	area % of the AU	
Oil in Oil Accumulations:	minimum		mode		maximum
Volume % in entity			12.00		
Gas in Gas Accumulations:					
Volume % in entity			3.00		
3.	Central High Tablelands (CNHT)	represents	11.55	area % of the AU	
Oil in Oil Accumulations:	minimum		mode		maximum
Volume % in entity			28.00		
Gas in Gas Accumulations:					
Volume % in entity			6.00		
4.	Cross Timbers and Prairie (CRTP)	represents	0.18	area % of the AU	
Oil in Oil Accumulations:	minimum		mode		maximum
Volume % in entity			1.00		
Gas in Gas Accumulations:					
Volume % in entity			1.00		
5.	Pecos Valley (PCVA)	represents	0.01	area % of the AU	
Oil in Oil Accumulations:	minimum		mode		maximum
Volume % in entity			0.00		
Gas in Gas Accumulations:					
Volume % in entity			0.00		
6.	Redbed Plains (RBPL)	represents	13.75	area % of the AU	
Oil in Oil Accumulations:	minimum		mode		maximum
Volume % in entity			6.00		
Gas in Gas Accumulations:					
Volume % in entity			30.00		

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7. Rolling Plains (RLPL) represents 0.17 area % of the AU

Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		0.00	
Gas in Gas Accumulations:			
Volume % in entity		0.00	

8. South-Central Great Plains (SCGP) represents 25.75 area % of the AU

Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		8.00	
Gas in Gas Accumulations:			
Volume % in entity		15.00	

9. Southern High Plains (SHPL) represents 25.33 area % of the AU

Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		5.00	
Gas in Gas Accumulations:			
Volume % in entity		20.00	

10. Texas High Plains (TXHP) represents 8.49 area % of the AU

Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity		15.00	
Gas in Gas Accumulations:			
Volume % in entity		20.00	

11. _____ represents _____ area % of the AU

Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			

12. _____ represents _____ area % of the AU

Oil in Oil Accumulations:	minimum	mode	maximum
Volume % in entity			
Gas in Gas Accumulations:			
Volume % in entity			